

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: May 16, 1986

RECEIVED D.N.R. 2300

To: Jim Raber

MAY 16 1986

From: G. Jolin 

LAKE MICHIGAN DIST. HQ.

Subject: Rat River Wildlife Area

As you are aware, I prepared the first draft of the master plan for this property a number of years ago. Adrian began work on a later draft but then moved on to Appleton with no significant progress taking place. John has prepared a first draft of the Wolf River Management Plan, but other than a few discussions, no work has been done on the Rat River Master Plan.

Recent discussions with John has compelled me to review my past thinking on this property as well as its present status. My purpose is to initiate a review of the property and its potential contribution to our resource management program. Hopefully you and I can stand back and take a "fresh look" while providing additional guidance for use in completing the final draft master plan.

I offer the following thoughts for a place to start:

Rat River has been classified as a low priority acquisition/development area. I don't feel that status is now justified. Part of the rationale for our thinking was the potential for only shallow-water impoundments and associated cattail management problems. We are both aware of the immense value of these shallow impoundments for waterfowl as well as associated management problems.

My position throughout has been that we can and will develop feasible management techniques to overcome the difficulties in managing shallow water pools which will make their development practical. Our efforts with the cattail management project are in fact showing this to be true. Our waterfowl nesting structure project is another effort and designed to deal with the limited availability of upland nesting sites on some properties (including Rat River) and associated high nest/hen mortality on upland sites.

We are presently looking at an expanding MVP flock and seeing increased goose use of Winnebago and Outagamie Counties. We are also evaluating ways of better managing this flock for our public. Perhaps we should consider Rat River as a potential goose management area because of its location (north of Eldorado and Rush Lake, south of Shiocton and west of Collins, Killsnake and Brillion).

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date:

File Ref: 2100

To: Master Plan Reviewers

Date of Routing

12/4/81

From: Charles E. Higgs

Subject: Master Plans - District Staff Review

With the high priority being placed on Master Planning it is important that all Resource Management and Environmental Impact District Staff people give a meaningful review of all plans we forward to Madison.

I am asking you to give careful consideration while reviewing this plan. If time does not permit you to get at it soon, move it along and do not sign off, it will come back to you. The office of District Director should be the last to see it. I expect the total review time to be less than 30 working days.

This letter will accompany all plans to the Division Administrator so the responsible bureau in Madison will know who has seen it and what their comments were.

MASTER PLAN

RAT RIVER Wildlife AREA

FUNCTION	REVIEWER	DATE	COMMENTS (SEPARATE PAGES IF NECESSARY)
Envir. Impact	RLF	12/1	12/1/81
Parks & Rec.	COW	12/15	
Fish Mgt.	CTC	1/8/82	
Forest Mgt.	WAK	12/11	12/11
Wildlife Mgt.			
Park Planning	DER	12/8	rec. needs & justifications section missing - other comments as noted
Real Estate	RL	12/11	
Office Dist. Dir.			

This MUST be done by Dec 31.
Please move it along. R

6/8/82

Jim:

R&B R. plan and map cards. I made several changes to accommodate x-c trail concept. See paragraphs;

pg 4 par 5 & 6 (added)

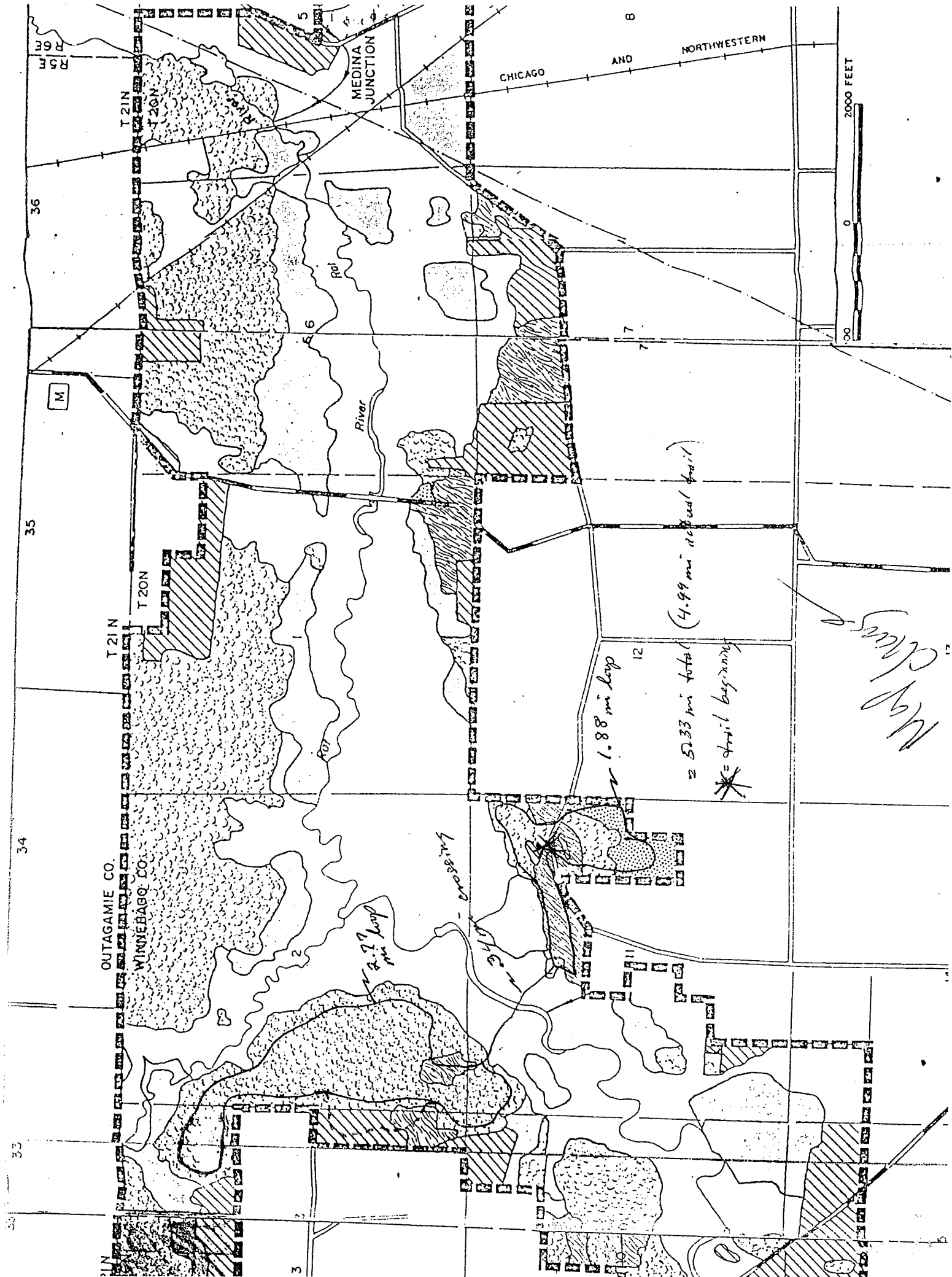
page 10 par 6 (added)

page 12 par 6 Titled 7. Multiple Use (added)

Also support data; two dike locations both w/ 4' 55" & 12' tops - had no time to resolve structure cost but unless I made some gross mistakes (certainly possible) \$20-³⁰25,000 should get earthwork done depending on peat to be moved - Map of property additions needed if we go for main pool concept (900-910 acres) - for the heck of it I stuck an average of \$⁷⁵~~25~~/a on it which hits an added \$675,000⁰⁰ for land acq. - I would also recommend the property acq. be given an added 40-80 a to use to buy access property into north line of "main pool blocks". - Map of my layout for ≈ 5 mi x-c trail which after much thought we will try to accommodate

Best,

Sam



Rat R- 585' of main dike across Rat R @
Pezande prop (.11 mi)

- 2339' of low head dike just North
of Pezande bldg to cut off flow to the
West. (.44 mi)

RAT R. WILDLIFE AREA
MASTER PLAN
CONCEPT ELEMENT

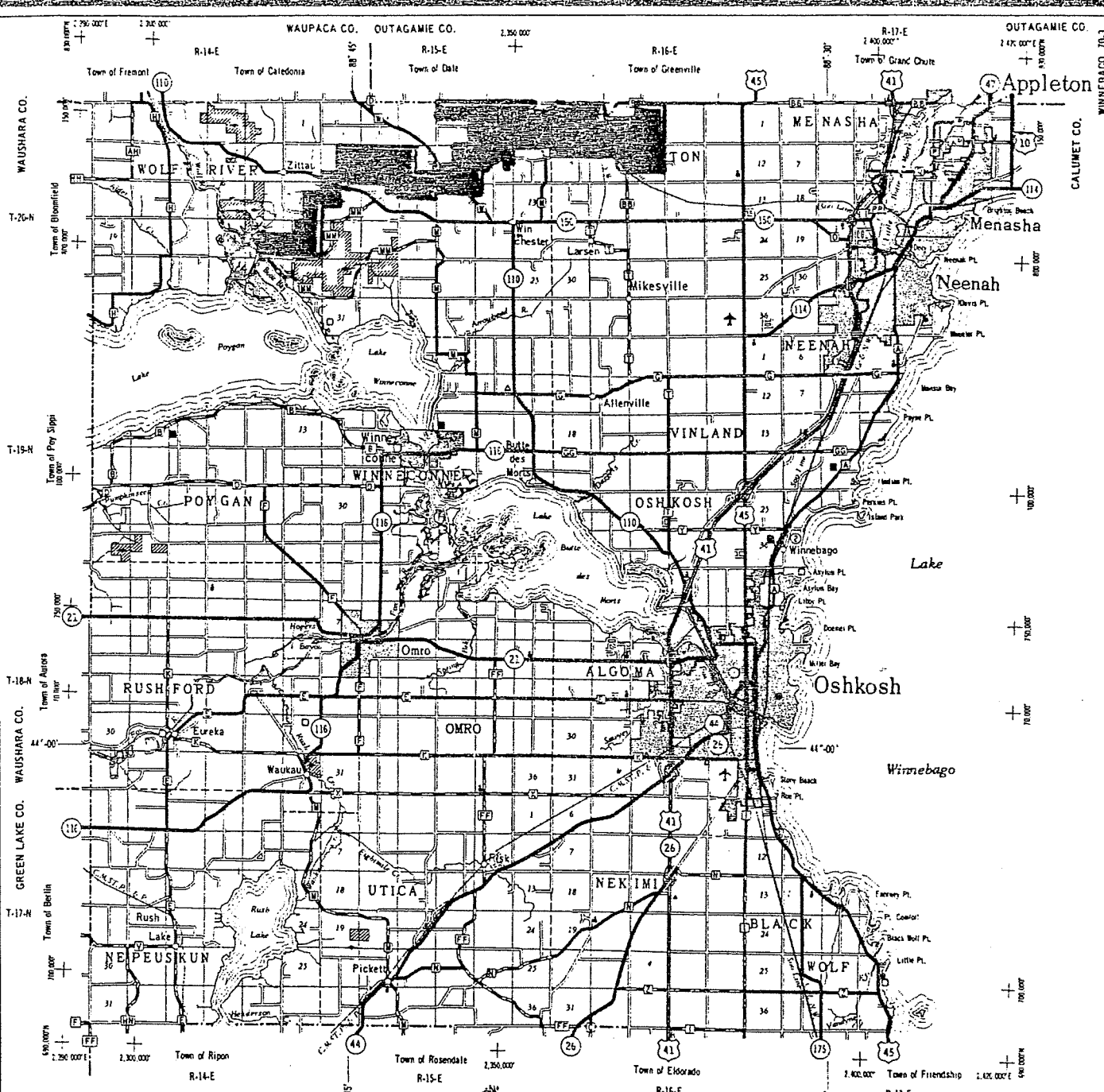


Property Task Force

Leader - Gary Jolin, Property Manager
Dan Folz, Fish Manager
Don Thompson, Forester

Approved by Natural Resources Board.

Date



LEGEND

- | | | |
|------------------------|--------------|--------------------------------|
| Portland Cement | U.S. & STATE | Civil Town Boundary |
| Blue Concrete | COUNTY | Corporate Limits |
| Brumans | | Not B State Forests |
| Gravel | | Airport |
| Earth | | Fish Hatchery |
| *Town Road | | Game Farm |
| Fire Lane | | County Seat |
| Multilane Divided | | Unincorporated Village |
| Freeway | | Schools |
| Interchange | | Public Hunt or Fish Gnd |
| Highway Separation | | Hospital |
| Interstate Highway No. | | Ranger Station |
| U.S. Highway No. | | Public Camp & Picnic Gnd |
| State Highway No. | | State Park... With Campsites |
| County Hwy Letter | | Without Campsites |
| Roadbed | | County Park... With Facilities |
| Dom | | Without Facilities |
| State Boundary | | Wayside... With Facilities |
| County Boundary | | Without Facilities |



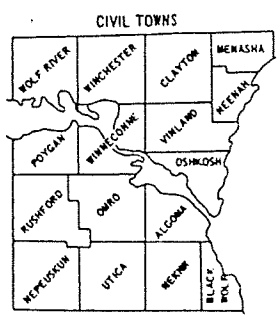
TOWNSHIP NUMBERING

6	5	4	3	2	1
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

Land Area 654 Sq. Mi.
Population 129,228
County Seat Oshkosh

MILES OF HIGHWAY as of Jan. 1, 1977

STATE	154
COUNTY	215
LOCAL ROADS	907
OTHER ROADS	3
TOTAL FOR COUNTY	1285



WINNEBAGO CO.

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OFFICE BUILDING
WINNEBAGO, WISCONSIN
SCALE 1" = 10 MILES
Corrected to
JAN. 1976
Compiled from U.S.G.S. Quadrangles
Based on Aerial Photographs

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MANAGEMENT PROBLEMS
RECREATIONAL NEEDS AND JUSTIFICATIONS
ANALYSIS OF ALTERNATIVES

SECTION I - ACTIONS

GOAL, OBJECTIVES & ADDITIONAL BENEFITS

Goal: To manage a state-owned wildlife area to provide wildlife base recreation including hunting, trapping and compatible non-hunting recreation and for the production of waterfowl.

Annual Objectives:

1. Provide about 4,500 participant days of hunting and trapping opportunities/yr. as follows through 1999.
 - a. Deer - 1,700
 - b. Rabbits and squirrels - 400
 - c. Pheasant - 1,300
 - d. Trapping - 300
 - e. Duck - 500

Annual Objectives Changed by Development:

(Target date for completion of development 2000.)

1. Produce an average of ~~about~~ 3 ducks per acre on 200 acres of dug ponds and level ditches (600 ducks) and provide 1,200 participant days of duck hunting opportunity.
2. Produce an average of ²~~two~~ ducks per acre, (125 ducks) on 6.6 miles of river, (63 acres), through 1999.
3. Increase the average ~~annual~~ use by local and migrant waterfowl during the month of October from about 350 to 1,100 ducks.

Annual Additional Benefits:

1. Benefit nongame species indigenous and transient to the region.
2. Accommodate 5,000 annual participant days of compatible non-hunting recreation, including cross-country skiing, hiking, nature observation and outdoor education.

RECOMMENDED MANAGEMENT AND DEVELOPMENT

General:

This property does not lend itself to the type of major impoundments once envisioned. While the areas from highways "110" to "W" and from "M" to the Medina Junction area appear to offer some potential for low-

head waterfowl impoundments, a more complete assessment of this potential and anticipated benefits is required. Presently, the greatest value of the property is its provision of public lands for broad-base recreational and educational activities in a highly urbanized part of Wisconsin. This will continue, with or without the development of major waterfowl impoundments.

Recommended Boundary Changes

(Figure 2, page 3)

- (a.) That portion (approximately 615 a.) of the existing project lying downstream of Zittau Road, is recommended for annexation to the the Wolf River Wildlife Area which abutts the western most boundary of the Rat River Wildlife Area. ~~(Figure 2, page 3)~~.

The Wolf River Wildlife Area will then appear as in Figure 3 ~~on page~~. The acreage within the amended boundary will be approximately 2,851 acres, an increase of 586.97 acres. It is recommended that the project acreage goal of 2,208.5 acres be retained until Management Planning is completed for this property, (198). The acquisition of an additional 248 acres of priority one fish spawning habitat in the portion to be annexed is recommended.

Acquisition of this portion of the Rat River project was intended primarily to preserve important fish spawning habitat adjacent to the Rat and Wolf Rivers. While the opportunity for a waterfowl impoundment was considered, review by field personnel indicate land form and drainage limitations. Since impoundment is not practical, the preservation of these habitats more nearly align with the preservation of wetlands for fish spawning, waterfowl habitat preservation and provision of lands for hunting associated with the Wolf River project. The tract of land owned by the Department thru which Zittau Road passes should be retained for development of a public access site in the future. (SW/4, SE/4, Sec. 13, T20N, R14E)

- (b.) That segment of (approximately 263 a.) the existing project lying between Zittau Road and State Highway 110, (except for the above mentioned tract), is recommended for deletion.

Originally, acquisition of this segment was primarily intended to provide opportunity for bank fishing by the public. Field investigations indicate little feasibility for this activity upstream of the Zittau Road bridge. There appears to be no significant opportunity for wildlife habitat management, preservation or hunting in this segment.

- (c.) Approximately 128 acres should be deleted from the extreme northwestern corner of that segment of the project lying between County Highways "W" and "M". (The N/2 of the NW/4 and part of the N/2 of the NE/4 of Section 3, T20N, R15E.)

The planned acquisition of this area was probably due to original expectations of flooding resulting from the anticipated impoundment just upstream of Hwy "W". The opportunity for a waterfowl impound-

RAT RIVER FISHERY AND WILDLIFE AREA

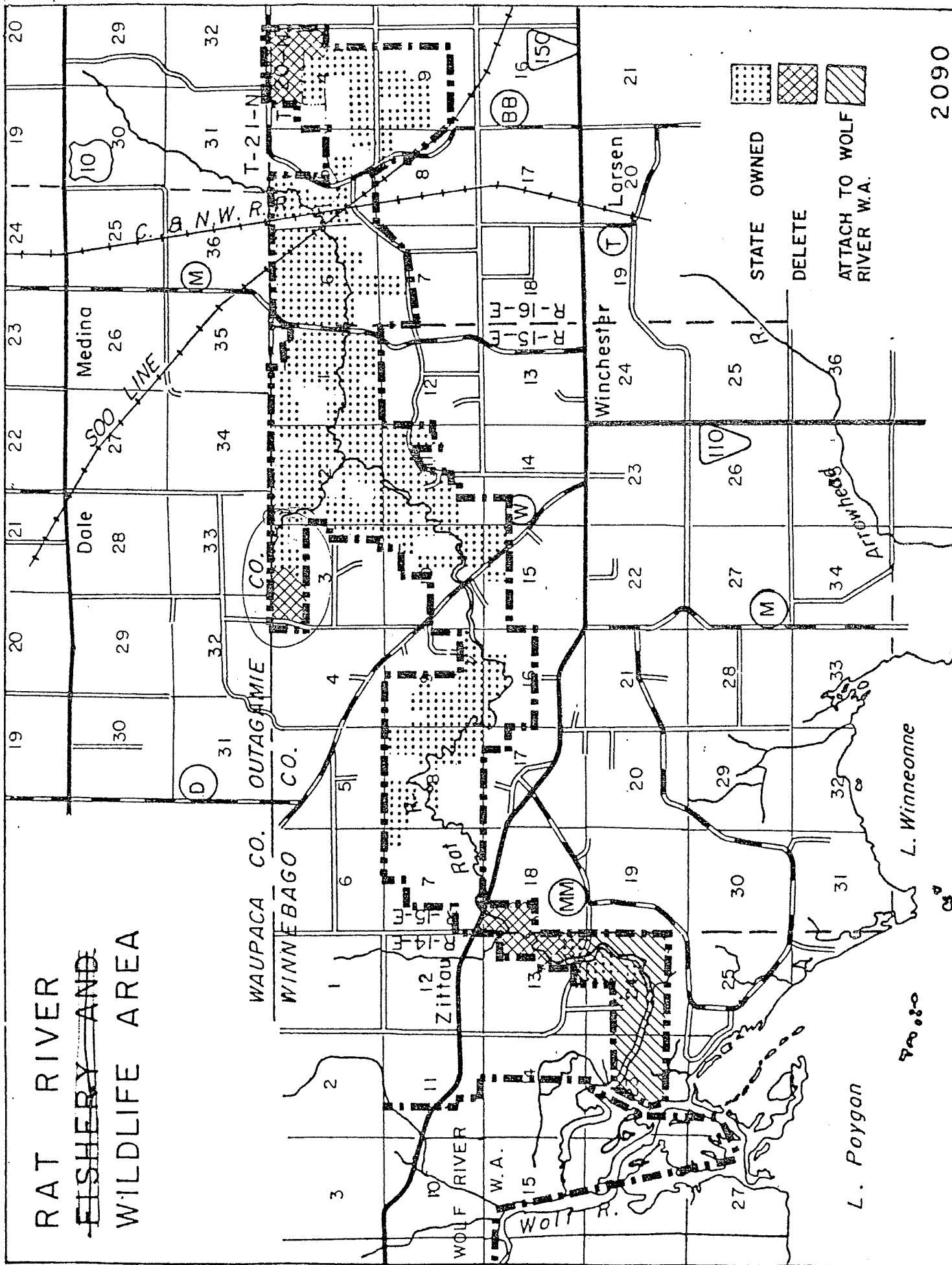
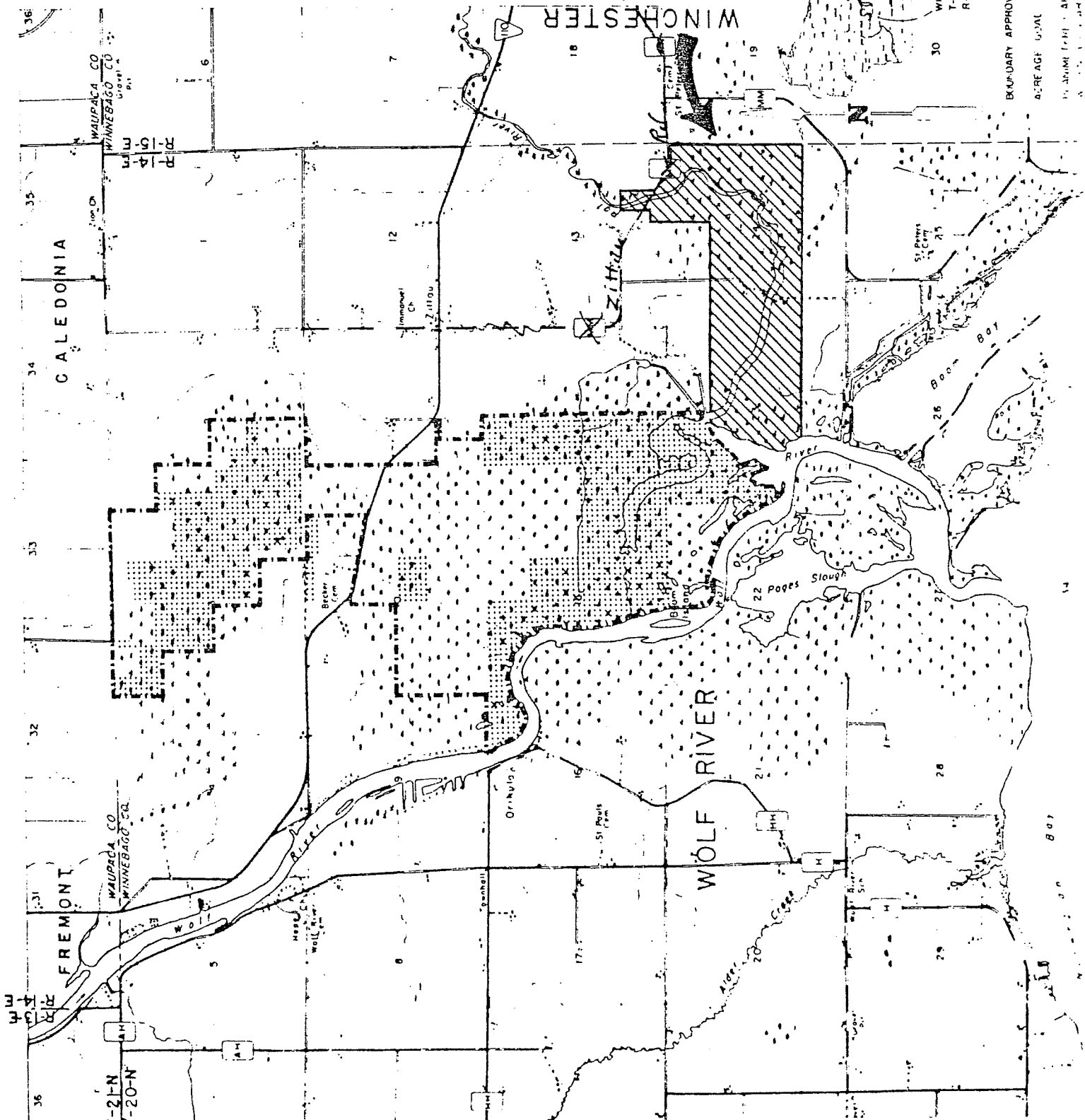


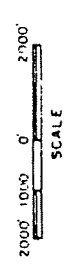
FIGURE LAND CONTROL



NOTE:
ADDED TO WOLF RIVER
W.A. FROM RAT RIVER
W.A.

LEGEND

- PROJECT BOUNDARY
- STATE OWNED
- STATE EASEMENT



STATE OF WISCONSIN
DEPT. OF NAT. RESOURCES
DIVISION OF SERVICES

WOLF RIVER

WILDLIFE AREA

DATE: 1-2-73
PROJECT NO: 8900

WINNEBAGO CO
T-20-N
R-14-E

BOUNDARY APPROVED 3-8-70

DATE: 2-20-18

APPROVED: [Signature]

BY: [Signature]

ment now appears very improbable. Even if possible, its value would be debatable because of negative impacts on deer winter habitat over much of the northern 1/3 of this project segment.

- (d.) Approximately 135 acres should be deleted from the extreme northeastern corner of the existing project boundary.

This portion of the property was once thought to have potential for impoundment and later as a goose pasture area. The current primary use and value for the foreseeable future is as recreational hunting land for deer, pheasant and cottontail rabbit. The proposed deletion is almost entirely sod farm. Its deletion will have little negative impact on the wildlife area objectives.

The resultant boundary for the Rat River Wildlife Area will encompass 6163.73 acres and appear as illustrated by Figure 2.

Recommended Management Activities Through 1999 (Figure 4)

Construct approximately 200 acres of shallow ponds, potholes, and level ditches in the area between Hwy 110 and Medina Junction to improve duck and furbearer habitat. The construction of small nesting islands and use of nesting structures will help overcome the current lack of secure nesting sites.

Existing and newly acquired uplands will be developed, using normal nesting, food and cover development techniques for a broad spectrum of wildlife to enhance present habitat values. There appears to be little opportunity for run-off ponds due to the level topography

The potential for low-head, (less than three feet), impoundments between Hwy 110 and Medina Junction will require further engineering surveys and feasibility evaluation of potential management techniques. Items to be analyzed include:

- Water Supply
- Soil Contours
- Upland Nesting Habitat
- Low-head Pool Management Techniques
- Impact on Private Lands and Project Boundary
- Costs-Benefits







to
acq.
section

The recommended property boundary changes result in a boundary which encompasses 6,163.23 acres with an approved acquisition goal of 5,136.7 acres. It is recommended that the acquisition goal be increased to 6163.23 acres.

The priority for continued land acquisition efforts in the future will, in large, be determined by the outcome of studies to determine the feasibility of developing low-head impoundments on the property. The current "willing seller-buyer" philosophy will be maintained.

RAT RIVER WILDLIFE AREA (1 of 4)

LEGEND

-  BOUNDARY
-  EXISTING PARKING LOT
-  PROPOSED PARKING LOT
-  NATURAL AREA
-  ADD TO ADJOINING WOLF RIVER WILDLIFE AREA
-  DELETE

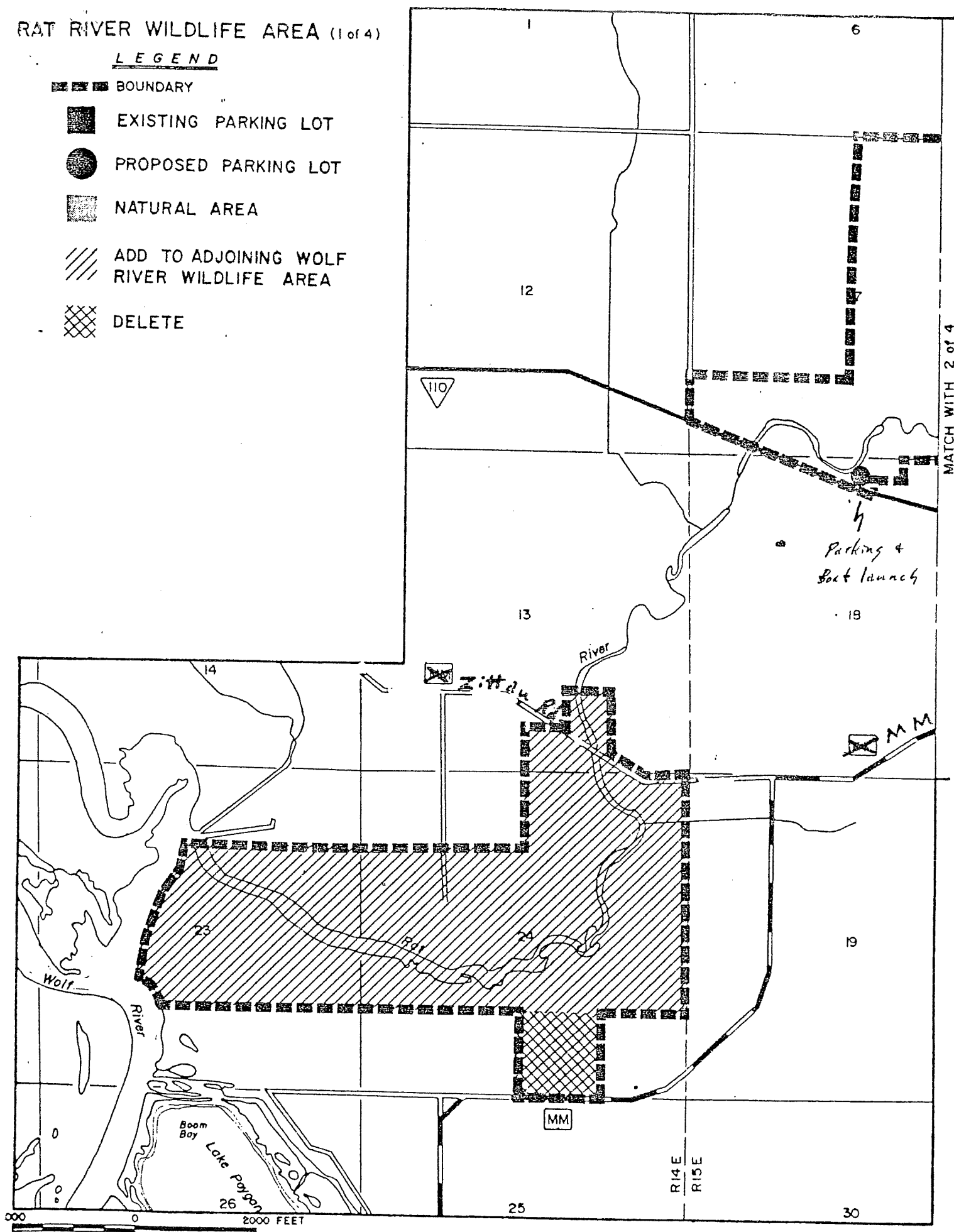
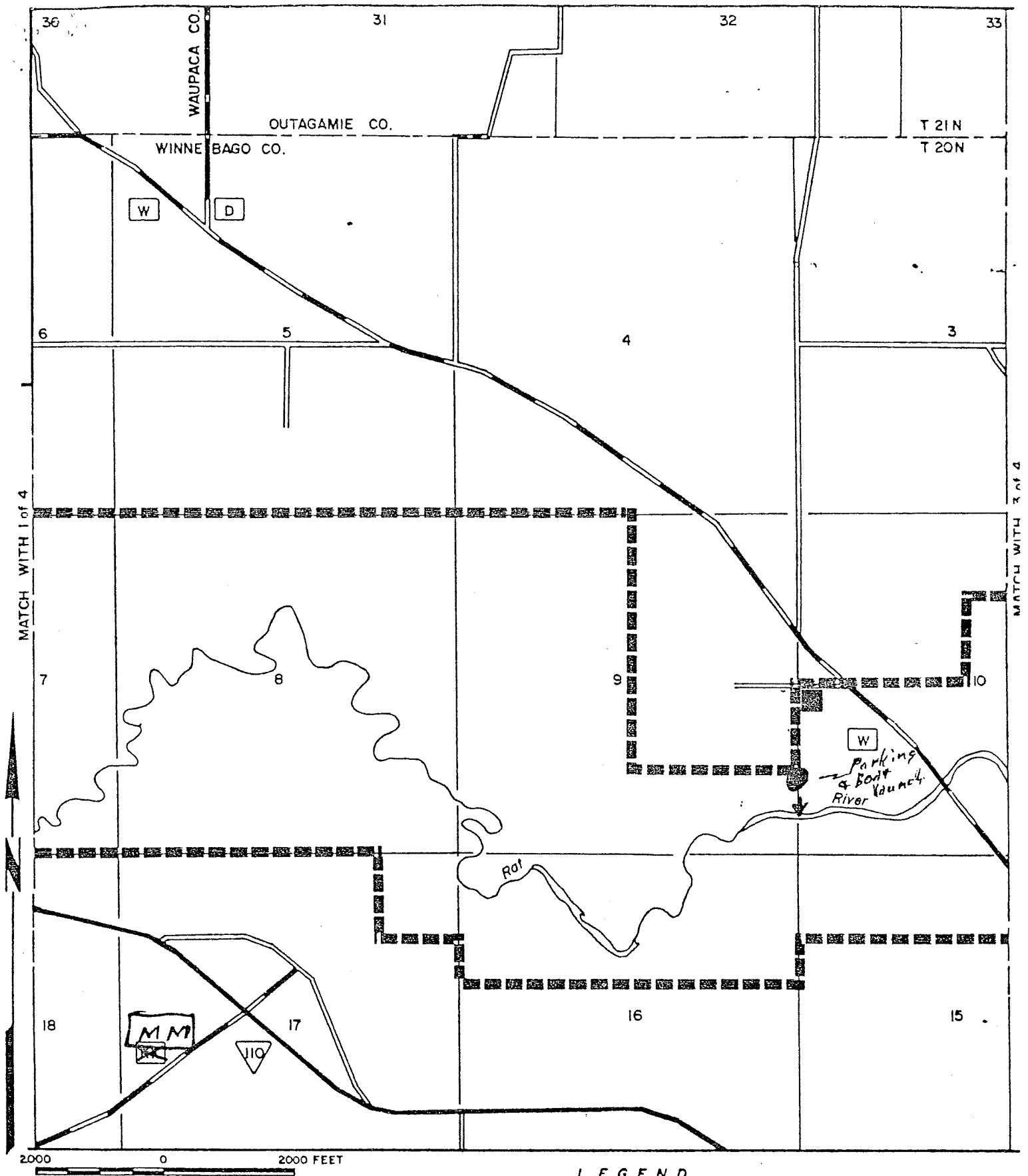
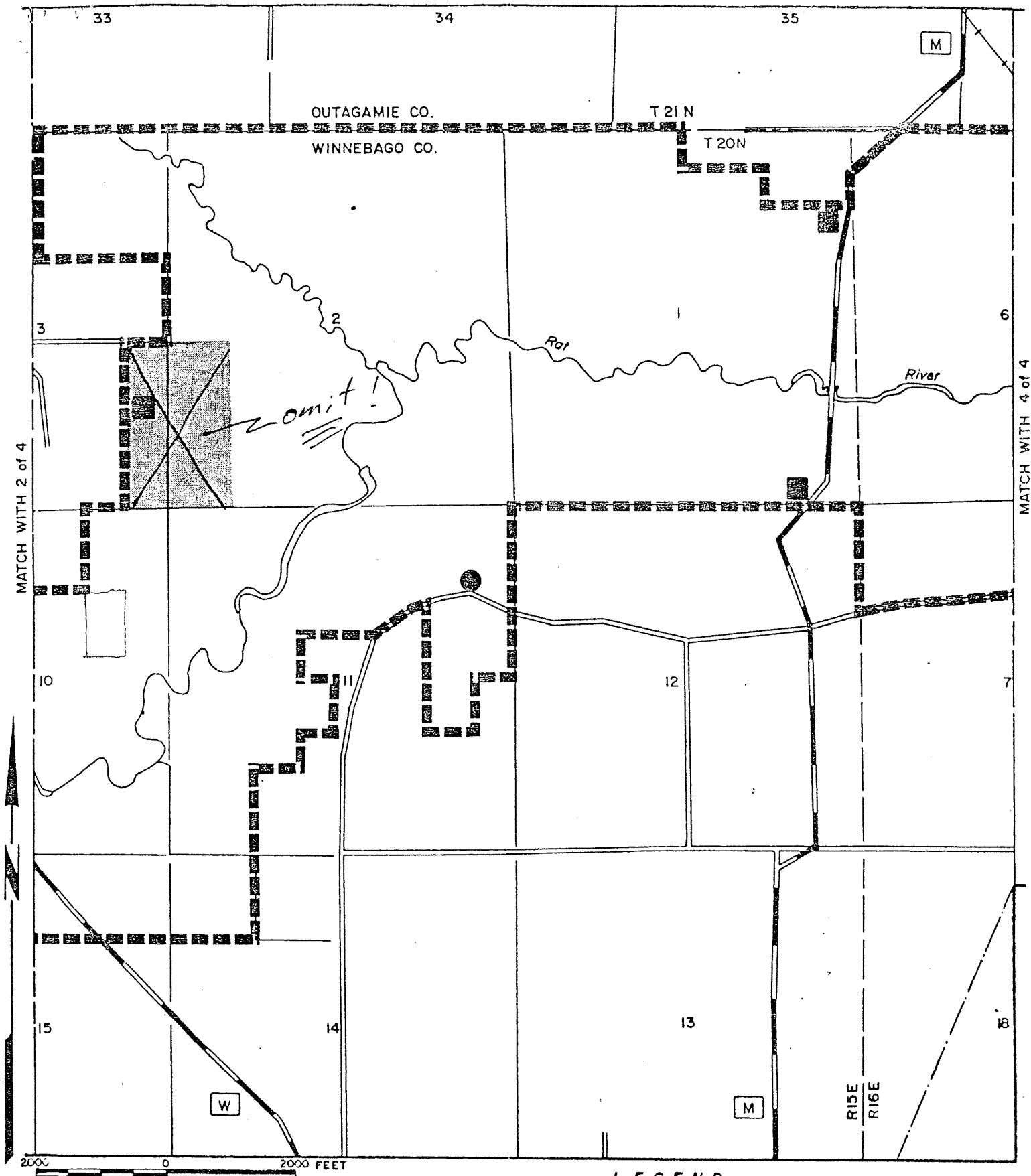


FIGURE DEVELOPMENT



RAT RIVER WILDLIFE AREA (2 of 4)

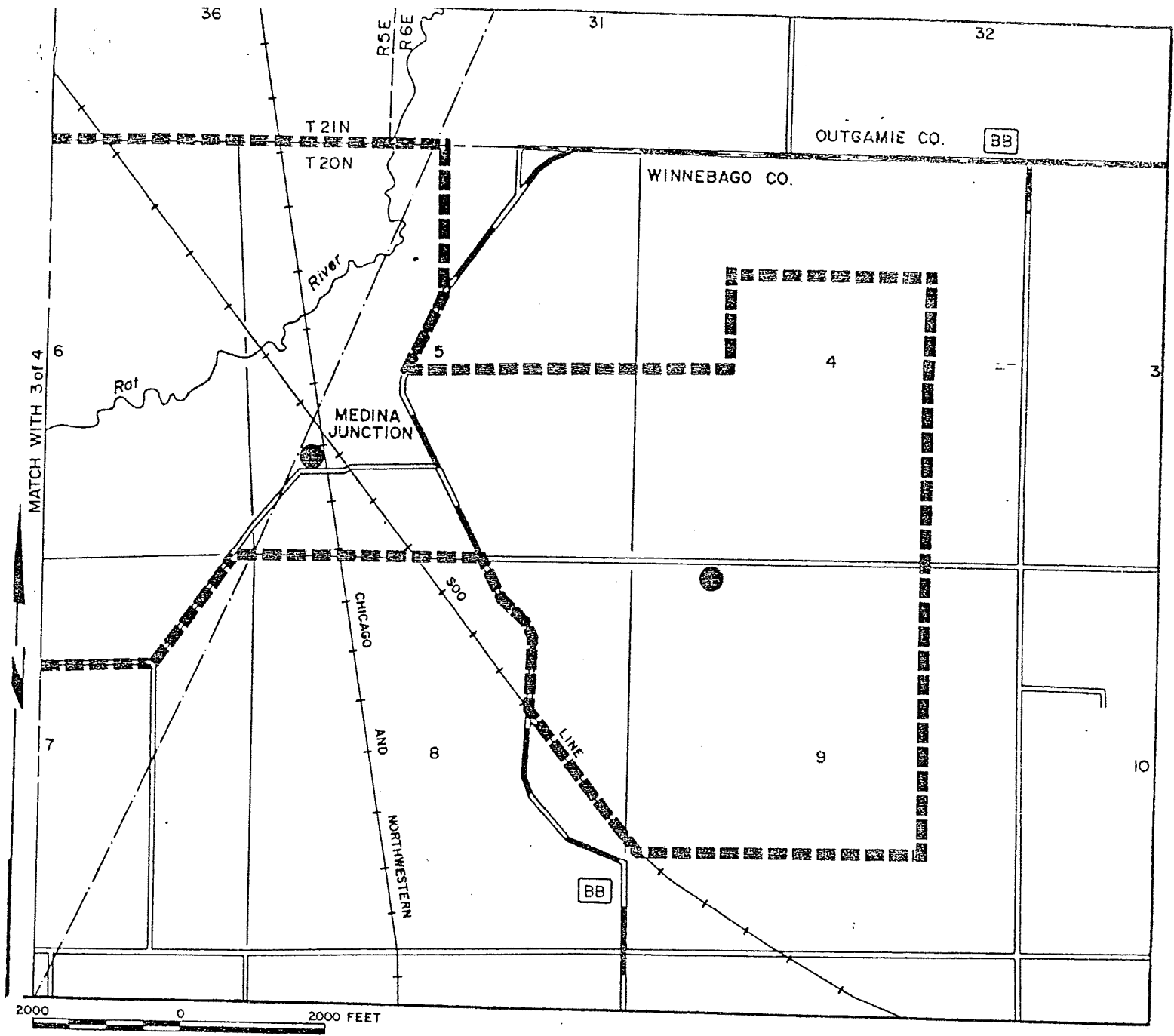


LEGEND

- BOUNDARY
- EXISTING PARKING LOT
- PROPOSED PARKING LOT
- NATURAL AREA

RAT RIVER WILDLIFE AREA (3 of 4)

FIGURE DEVELOPMENT



RAT RIVER WILDLIFE AREA (4 of 4)

LEGEND





-  BOUNDARY
-  EXISTING PARKING LOT
-  PROPOSED PARKING LOT
-  NATURAL AREA

FIGURE DEVELOPMENT

110
accy
Sec from

The purchase of improvements will be avoided wherever possible. These recommendations will ensure the preservation of important wetlands, wildlife habitat and provision for critical recreational lands in the Fox River Falley. Completed acquisition of the property at 1982 costs equals \$1,767,00.00.

Final analysis of impoundment potential will probably not be completed until sometime after 1985. Providing suitable opportunities exist, (present information indicates the best opportunities lie between Highway "110" and "W" and between Hwy "M" and Medina Junction), boundary revisions will be required to ensure adequate protection of adjacent private lands and to provide adequate upland nesting habitat for ducks.

Public Use Facilities (Figure 4)

No major public use facilities are planned for this property. The construction of ~~five~~ parking and boat launch areas are anticipated to facilitate access by the public and promote safety by keeping autos off the roads. See ~~Figure 4 for the anticipated locations.~~

If use of the property by local school districts and other groups continue to increase, the development of an education center may be an eventuality. In all probability, this could be best achieved by the Department granting a long-term lease agreement to cover the site of any facilities needed for this purpose which is compatable with the project goal. Development costs and maintenance would have to be borne by any district(s) participating.

The potential for cross-country ski trails is presently being evaluated in conjunction with East Central Regional Planning and Winnebago County. Approximately five miles of trail is under consideration for the area between County Highways "W" and "M", primarily sections 2 and 11, T20N, R15E. Long-range expectations include a trail of 6-8 miles around the proposed flowage area between highways "110" and "W".

If the trails are feasible, development, maintenance and support facilities is best administered by permit with local county governments.

All areas proposed for development will be examined for the presence of endangered and threatened wild animals and wild plants. If listed species are found, development will be suspended until the District Endangered and Nongame Species Coordinator is consulted, the site evaluated and appropriate protective measures taken.

SECTION II - SUPPORT DATA

BACKGROUND INFORMATION

Property History:

The Rat River Project was established in 1963 as "an excellent spawning area and general habitat for fish and wildlife" with emphasis on preservation to "prevent private development."

From its inception, this project has been viewed as having multi-function, (fish and wildlife), benefits. To that end both fish and wildlife have been involved in the acquisition and management program. From 1963-1978, the project was listed as a fishery area. Acquisition monies were supplied by that function, while actual acquisition effort and management were the responsibility of wildlife management personnel.

In late 1978, the property was transferred to Wildlife Management with full responsibility for acquisition and management. Wildlife monies will be utilized to complete acquisition of the property as well as any development and maintenance. This was done because continued re-assessment of program responsibilities and needs indicated major benefits from the property would accrue to wildlife management.

Historical:

Little historical information on this area appears in local records. No mention of use by the Indians is made; so, while it was, no doubt, used from time to time for hunting and fishing, it would appear to have been of no major significance. Local major Indian villages appear to have been associated with the Fox-Wolf waterway, the closest near the mouth of the Wolf River and Lakes Poygan-Winneconne.

Records from the settlement era are also noticeably lacking in comments about this area so again it would appear to have had no particularly unique values during this period. Ownership patterns and information gleaned from local elders indicate several typical uses, primarily agricultural in nature.

The wooded areas were divided into smaller tracts and used as a source for fuelwood and fence posts. The "natural meadows" were utilized for grazing and farming of marsh hay for fodder and bedding. Since the Rat River typically varies from spring floods of 1-3 feet in depth to very nearly dry in the fall, these uses are consistent with that annual cycle.

While there is some present day utilization of private lands within the project for marsh hay and fuelwood production, the significant portion of today's use is oriented towards recreation. Deer hunting is the primary activity along with some duck and pheasant hunting.

Current Management Activities:

No major developments have been undertaken on the property. Primarily due to the fragmented ownership patterns. A number of parking lots have been constructed to facilitate public use and a number of shrub fencerows were established 15-20 years ago.

Recent efforts have included the conversion of several poor quality upland sites to good nesting habitat and the establishment of six permanent winter food patches, (10 a.). About 75 acres are sharecropped annually for corn and marsh hay. The annual stocking of 300-400 rooster pheasants from the Poynette Game Farm provides put and take pheasant hunting recreation in addition to the "naturalized" pheasant population.

There are ²²wood duck and ¹⁵bluebird nest boxes being maintained on the property.

Primary efforts over the last several years have been directed at assessing development ptoential for the property as part of the master planning process and documenting current recreational use and wildlife populations. A forest reconaissance of the property was completed in 1979. ¹¹The development of some level ditches, potholes and nesting islands is planned during the 1983-85 biennium, along with continuing efforts to improve nesting habitat and control of undersirable woody vegetation.

Current public uses include deer hunting, trapping, duck, pheasant and other small game hunting. Secondary uses include nature study, education, nut gathering and snowmobiling (primarily in the river channel). ¹¹The Neenah-Menasha public and parochial school systems use the property for environmental education. About 500 students participate over a three-day field trip period. Presentations include wetland ecology, hardwood forest management, soil ecology, wildlife management principles, soil and crop conservation, etc.

Current Use Levels (5,500 user days)

Deer hunting (Gun & Bow	- 1,400
Waterfowl hunting	- 400
Pheasant hunting	- 800
Other small game hunting	- 200
Trapping	- 200
Non-hunting activities	- 1,000
Environmental education	- 1,500

Ownership:

*Map
Project
gen I*

The ammended property boundary encompasses about 6,163.23 acres, with an acreage goal of 5,136.7 acres. State ownership now is 3,606.28 acres. Most ownership is in wetland types, both forested and marsh. Very little acreage within the property boundary is tillable uplands or upland forest. The ownership pattern varies between segments.

RESOURCE INVENTORY AND CAPABILITIES

Soils, Geology and Water Resources;

Soils in the wildlife area are of three basic types: Houghton-Willette, Zittau-Poy and Kewaunee-Manawa-Hortonville. The first are the soils through which the Rat River runs and associated wetlands. These are nearly level, very poorly drained organic soils. Soil probes made east of County Highway "M" indicate average organic soil depths of 4-6 feet though one pocket of greater than 8 feet was found. Most of this type is underlain by clayey subsoil.

The other ²~~two~~ soils groups compose the transition and upland soil types present on the property. These are well to poorly drained, gently sloping, (0-6% slopes), soils generally clayey or clay-loam in texture. The upland soils are generally good agricultural soils.

The entire property lies within the area once covered by glacial lake Oshkosh, which was associated with the last period of glaciation when this area was covered by the Valdres substage. This part of Wisconsin was molded by the Green Bay Lobe. The glacial till is underlain by strata of sandstones and limestones. Several artesian wells are present within the property boundary.

The only aquatic habitat on the property is that supplied by the Rat and Little Rat Rivers. That portion in the lower segments and east of County Hwy "M" are broader and provide the only available waterfowl breeding and brood habitat. The river channels elsewhere are generally too narrow and steep-sided to be attractive to waterfowl.

The Little Rat River flows into the Rat River between Highways "W" and "M" in about the mid-section of the property. Both streams tend to overflow their banks in the spring freshet and flood the lowlands of the property basin, then to be reduced to a mere trickle by the hot, dry months of late summer. The drainage basin is covered primarily by agricultural lands, marshlands and lowland hardwoods and conifer. The Rat River empties into the Wolf River near the northern shore of Lake Poygan.

In the publication, Surface Water Resources of Winnebago County, the Rat River is described "as a medium brown, hard water stream with silt as the predominant bottom material." Water sampling done in 1974 and 1978 indicate hardness values ranging between 172-520 and average close to 400. Alkalinity levels averaged about 290, BOD levels from 0.6 - 5.5 and averaged 3.3, both in the range of values expected for a slow moving fertile stream such as the Rat River.

Dissolved oxygen levels were low over much of the property area, ranging 0.3 - 1.8 for the late summer months of the 1978 sample year. Dissolved oxygen levels at County "MM" were higher, 2.7 - 4.5 during this same time period and varied greatly over the sample year 1975, (1.9 - 11.7). This is probably due to the effect of the Winnebago pool, which results in deeper water and less vegetation at this location. The lowest DO's at County "MM" occur in mid-winter and late summer, which correspond to the lowest flow periods and heaviest ice-snow cover. The death of fingerling northern pike have been observed between Hwys 110 and "W" during late summer, which would be expected with the low DO's observed in this area. Ammonia nitrogen and nitrate-nitrite levels were low in all samples, indicating little agricultural runoff to the river.

Fish and Wildlife:

The lower Rat River is utilized as a fish spawning area during the spring, with the major use being by northern pike, and minor use by walleye.

Most spawning activity occurs from State Highway 110 downstream, with that section of the Rat River from C.T.H. "MM" downstream to the junction with the Wolf River being the most heavily utilized area. While some spawning activity occurs upstream from State Highway 110, it is not considered of major importance.

Other species found include largemouth bass, perch, bluegill, black crappie, pumpkinseed, white bass, rock bass, bullheads, dogfish, longnose gar, redhorse, common white sucker and carp. No endangered or threatened species of fish, amphibians or molluscs are known to be present on the property.

Limited waterfowl production now occurs on the project. Major waterfowl use is restricted to spring migrant use of flooded wetlands and periodic fall use of mowed marshlands and river channel for feeding and resting. Primary species are the common puddlers, (mallard, blue-winged teal, wood duck, black duck, widgeon, pintail and shoveler), but spring use during the flood state includes divers such as the ringnecked duck, scaup and red-horse. There is also occasional spring and fall use by Canada geese and some use by coot and gallinule.

A moderate population of naturalized ~~ring~~ pheasants exists on the property as do ruffed grouse and woodcock. Common furbearers include the raccoon, muskrat and mink. The white-tailed deer, cottontail rabbit and gray squirrels conclude the list of common species having management significance.

A good cross-section of species having secondary importance include numerous raptors, passerines, shore and wading birds, reptiles, amphibians and small mammals normally indigenous to these habitats of east-central Wisconsin.

No endangered or threatened species of mammals, birds or reptiles are known to be present on the property.

Vegetative Cover (Figure 5)

~~A map of the primary vegetative types found on the property are illustrated in Figure 5.~~

No endangered or threatened species of wild plants are known to be present on the property.

Major vegetation types and acreages on the property are as follows:

Marsh	2,181 acres
Timber	1,730 acres
Agricultural	861.5 acres
Lowland brush	783.6 acres
Moist soil types	316.5 acres
Grass	171 acres
River	63 acres
Upland brush	39.63 acres
Borrow area (organic soils)	17 acres

Total = 6,163.23 acres

RAT RIVER WILDLIFE AREA (1 of 4)

LEGEND

- ▬ BOUNDARY
- DITCH
- ▨ TIMBER
- ▩ LOWLAND BRUSH
- ▧ CROPLAND
- ▦ GRASS
- MARSH
- ▤ UPLAND BRUSH & GRASS
- ▣ DELETE

NOTE:

LAND SHOWN IN SECTIONS 13, 23 & 24 WILL BE ATTACHED TO WOLF RIVER WILDLIFE AREA.

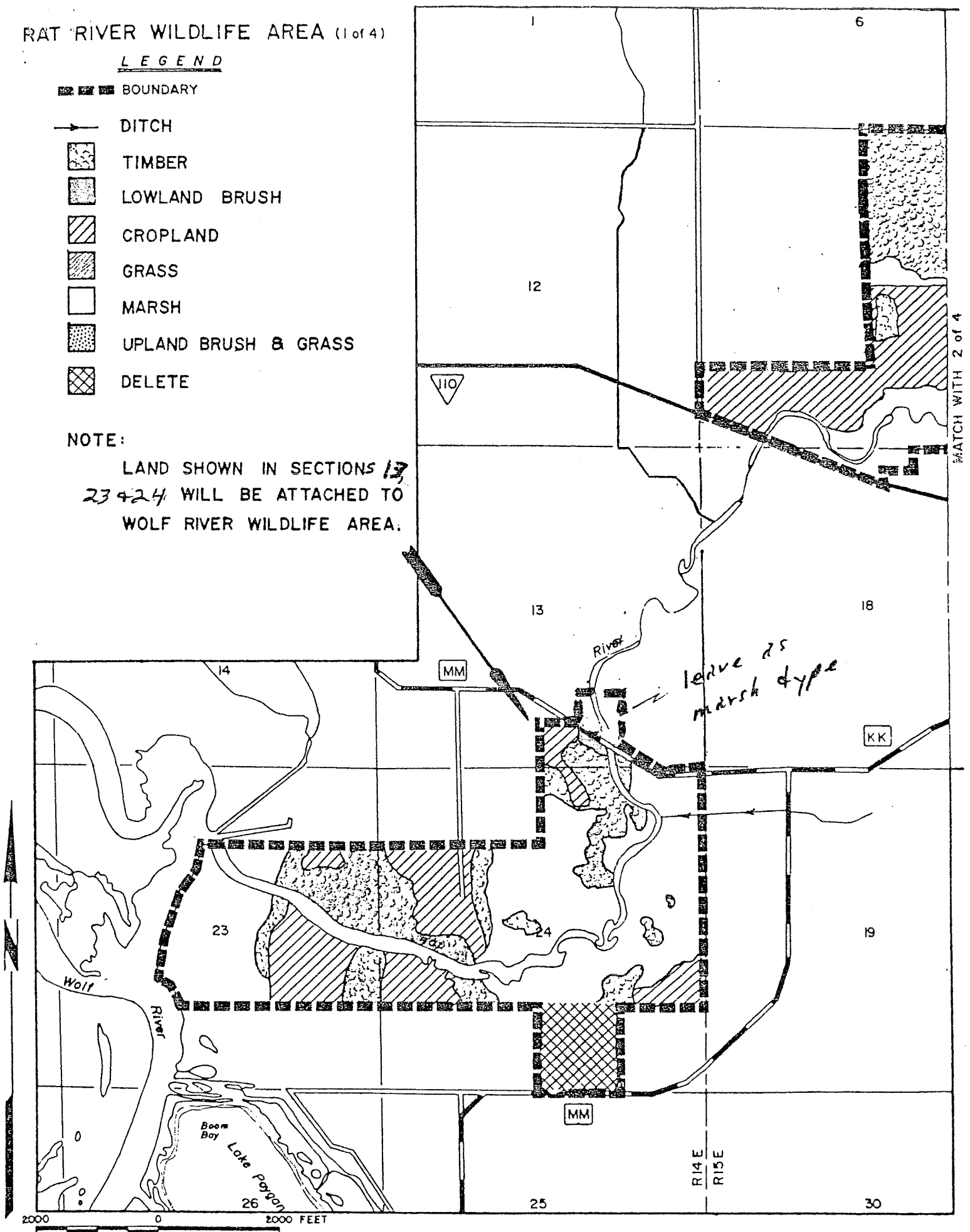
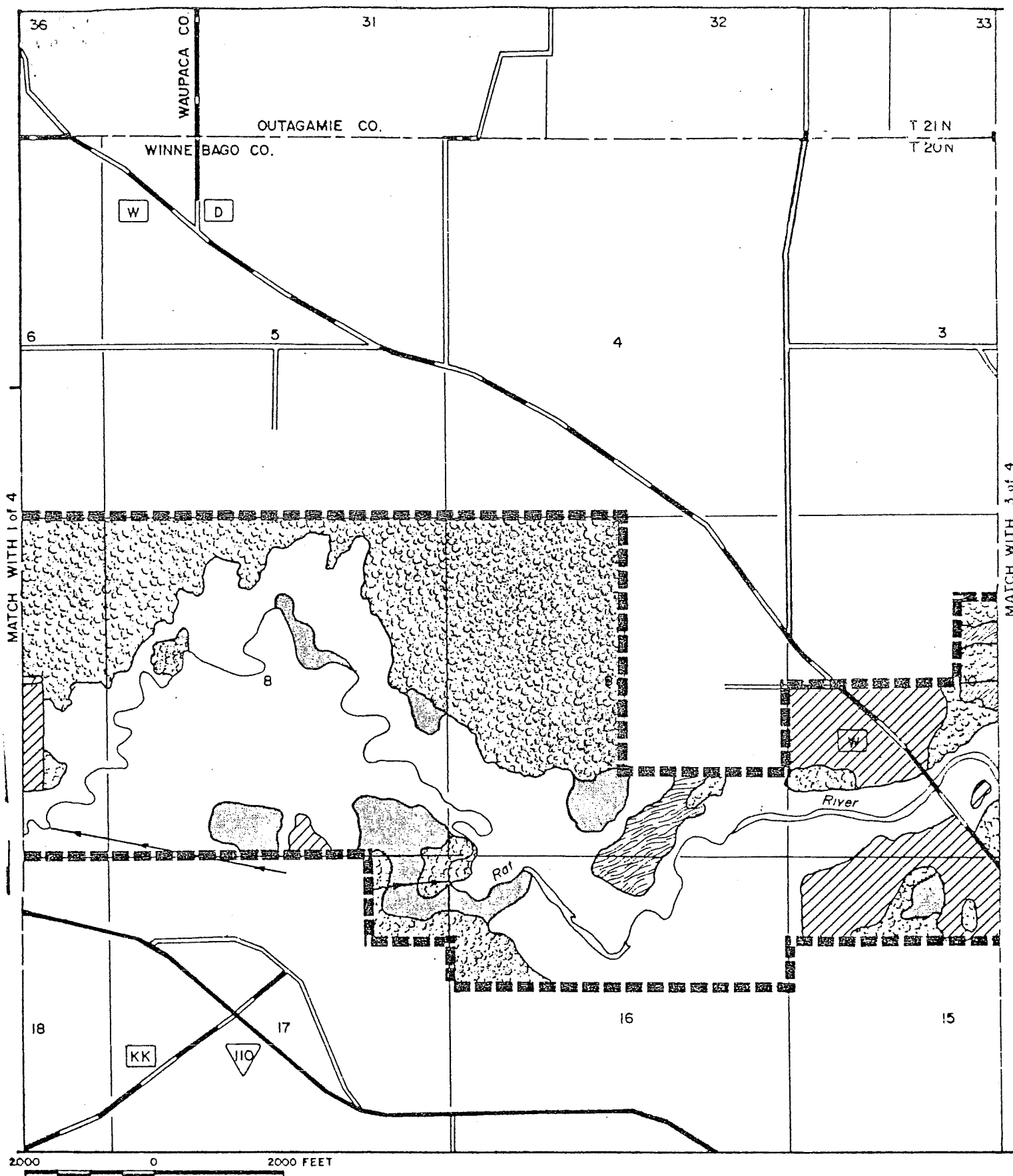


FIGURE VEGETATION



LEGEND

RAT RIVER WILDLIFE AREA (2 of 4)

— DITCH

TIMBER

LOWLAND BRUSH

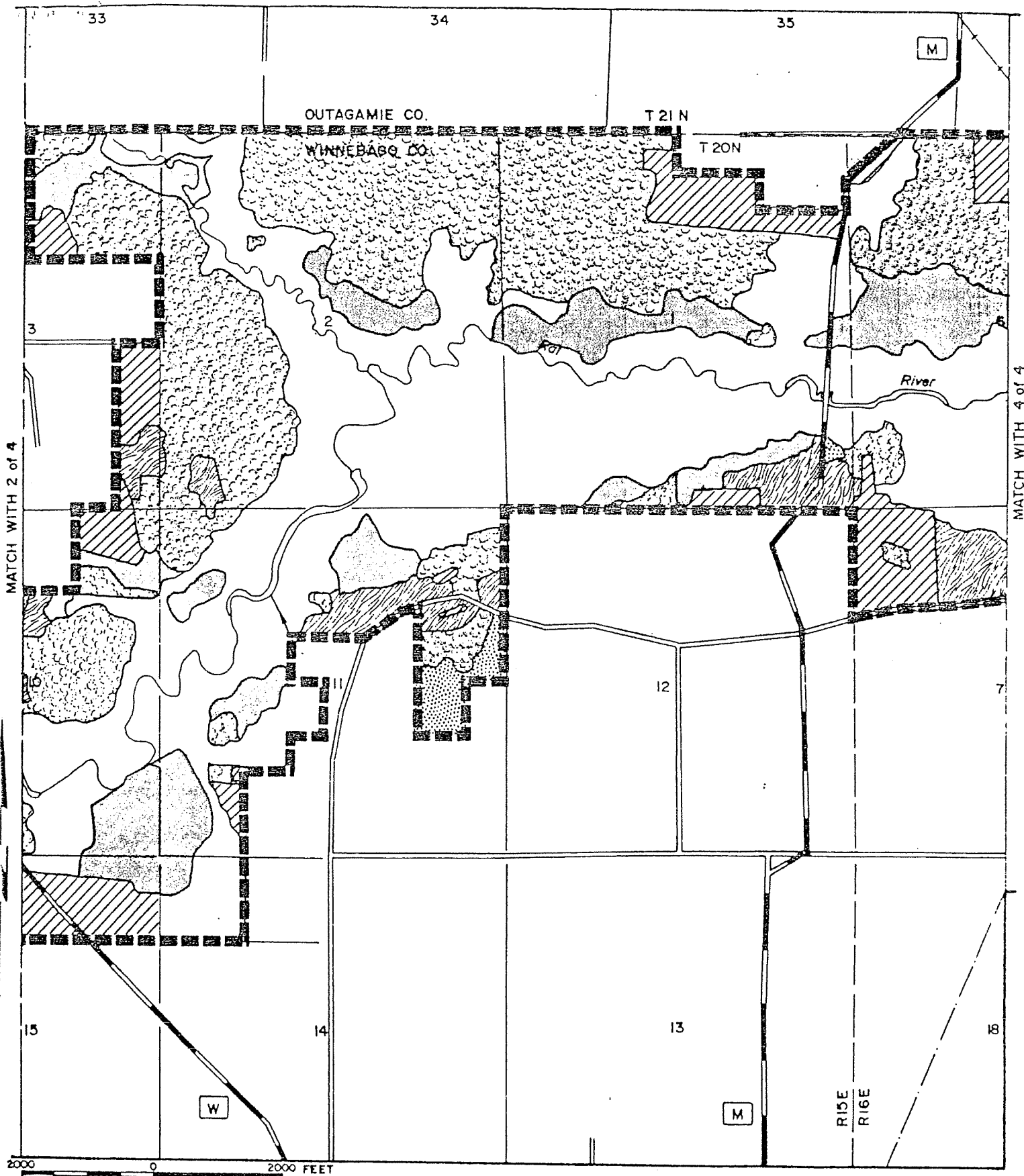
CROPLAND

GRASS

MARSH

UPLAND BRUSH & GRASS




FIGURE 5 VEGETATION

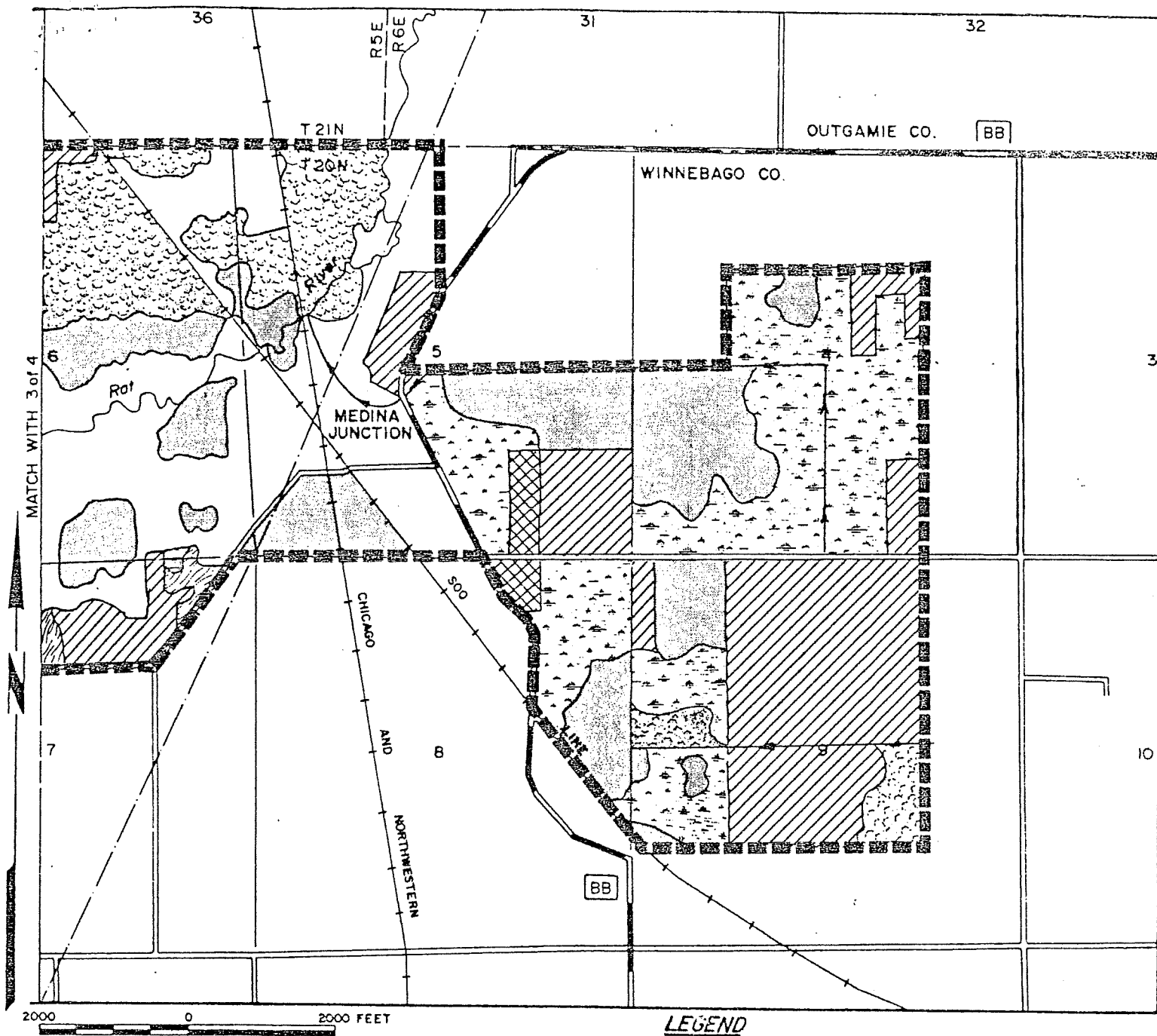


RAT RIVER WILDLIFE AREA (3 of 4)

LEGEND

-  DITCH
-  TIMBER

-  CROPLAND
-  GRASS
-  MARSH



RAT RIVER WILDLIFE AREA (4 of 4)

Approximately 28% of the property area is commercial forest land. The most immediate silvicultural prescription is the regeneration cut of Stand 2 in Compartment 2. This is an oak sawlog stand in need of treatment to maintain the type.

The opportunity for additional forest management will present itself in management which will benefit existing wildlife management practices. The application of cultural practices through the use of fuelwood sales and timber stand improvement cuts will be used to create type diversity and enhance habitats.

The primary timber type is swamp hardwoods sawtimber and poletimber (SH 15+'', SH 5-11"). The predominant species is green ash, with associated species including red maple, American elm, silver maple and black willow. The American elm is disappearing due to the incidence of Dutch elm disease.

Oak sawlog stands (O 15+'') consist of swamp white oak, bur oak, and shagbark hickory.

The swamp conifer poletimber stands (80 a. of SC 511") are composed of white cedar and tamarack. The white cedar reproduction is heavily browsed by deer and indicates future conversion of this type to swamp hardwoods, (ash).

A small stand of northern hardwood poletimber and scattered aspen stands complete the timber types. Sugar maple, red maple, American basswood, and black cherry are components of the northern hardwood type.

The lands typed as marsh are predominately canary grass, sedges and cattail. Other species components of this type include, but are not restricted to; phragmites, burreed, three-square and blue-joint. Type composition varies primarily as a result of current and past use and annual hydrologic cycles.

The area between County Highway "M" and Medina Junction is in part flooded due to interrupted drainage caused by cattail growths which partially block the river channel for about one mile west of "M". This blockage results in an average of about one foot of water being retained on this area through much of the growing season. The vegetation, as a result, is more hydric in nature than on the rest of the amended property.

Agricultural lands are of two basic types; typical uplands used for corn, oats, alfalfa rotation and moist soils agriculture in the easterly section where organic soils are planted primarily to corn and drainage is facilitated via a series of drainage ditches. The first occurs mostly as a narrow upland fringe on parts of the wildlife area and generally would not be classed as the best for agriculture.

Brush types, both upland and lowland, are dominated by the presence of dogwoods. Willow and holly form a significant component of some lowland sites and some stands of nearly solid willow having an understory of grass and nightshade can be found. These are primary winter habitat types for the pheasant, deer, grouse and cottontail rabbits that inhabit the area.

Historical and Archaeological Features:

The State Historical Society of Wisconsin indicate there are no buildings of architectural or historical significance within the wildlife area. Three prehistoric archeological sites were reported, all are in the area recommended for annexation to the Wolf River Wildlife Area, which is the only part of the project that has been surveyed.

- Wn-107 A campsite located in the NW^o, SE^o of Section 23, T20N, R14E.
- Wn-152 A campsite located in the W-1/2 of Section 24, T20N, R14E.
- Wn-153 A campsite located in the W-1/2 of Section 24, T20N, R14E.

The property manager of the wildlife area will maintain liaison with the Historic Preservation Division of the State Historical Society to establish inventory and protection needs prior to any major development on the property.

Land Use Potential:

The Scientific Areas Council has indicated an interest in the designation of a hardwood stand in the W¹/₂ of the SW^o of Section 2, T20N, R15E as a public Use Natural Area (N). This proposal is now being explored to evaluate needs, conflicts and classification criteria.

The remainder of the property is classed as a Fisheries and Wildlife Management Area, (RD²), consistent with the original intent for acquisition, development and use.

Since this property is a major public ownership in Winnebago County, it is anticipated that it may satisfy the need for numerous recreational and educational pursuits in addition to the primary fish and wildlife management objectives. The Department of Natural Resources recognizes these needs, particularly near large urban areas like the Fox River Valley and will make every effort to accommodate these needs when not in conflict with the property goal and objectives.

There appears to be a number of areas within the present ownership and future acquisitions which may be feasible for cross-country ski trail development. The specific location of the trails and the extent of trail development would have to be designed to complement the primary objective of wildlife management.

MANAGEMENT PROBLEMS

1. Water regulatory problems - One of the primary development techniques having potential for application on the property is the creation of open water areas for waterfowl/furbearers and nesting islands

for waterfowl. The creation of dug and blasted ponds, level ditches and nesting islands all will involve the deposition of material in the flood plain or flood way or (the expensive alternative) trucking to an upland site for disposal.

Because a significant amount of this type of habitat development is contemplated, an assessment of the affected cross-sectional area of flood plain will probably be required. It is expected that much of the effect on flood flows can be minimized by placing spoils, as much as possible, parallel with flood flow.

While this is not presently viewed as a major problem, only a more complete assessment will answer any concerns which may arise about potential impacts on the drainage basin. The property manager will establish and maintain contact with other involved regulatory bodies to ensure an adequate assessment of these needs.

2. Public overuse - The greatest potential for development of this problem are in association with the opening days of deer season and pheasant season. Current use levels are not viewed as excessive to the point of being problematical. However, continued increases in user demands and local decreases in habitat and available private lands for hunting may increase pressure on limited public resources to the degree where user controls may be required in the future.

Successful development of the property to enhance waterfowl habitat will add to this problem due to the limited nature of the resource and its habitat base. Only continued assessment of waterfowl production, harvests and hunter use levels can ensure the attainment of statewide production goals and establish acceptable harvest and user levels. The property manager will be responsible for the collection of data needed to adequately evaluate the statewide impact of this property and needs of its users.

3. Private inholdings - A significant portion of the only area having any possible potential for impoundment remains in private ownership. While this is not in itself viewed as a major problem, it must be recognized that complete acquisition of the area between Highway "110" and "W" will take a considerable number of years.
4. Engineering data - The lack of good contour data is considered a major problem contributing to incomplete assessment of development potential for this property. Only the availability of two foot contour data will allow full evaluation of property development potential for impoundments, effect on adjacent landowners and adequacy of the existing property boundary.

Refinement
The recommendations of this committee are based on assessment of impoundment potential using aerial slides of the Rat River taken by the property manager during flood stage, (1976 and 1979), and correlating this visual contour with several known ground elevations and available 10 foot contour information from USGS maps.

5. Forest Tax Laws - Two forested tracts within the boundaries of the Rat River Wildlife Area are entered under the Forest Tax Laws. The

NW/4 NE/4 of Section 7 of T20N, R15E, has been accepted for entry under the Forest Crop Law. This 40 acres was entered in 1982 for a 25-year contract. Election to withdraw the lands from the program will incur a penalty determined by the Departments of Revenue and Natural Resources. If the contract is not renewed after expiration, the landowner will pay a 10% severance tax on the appraised value of the merchantable timber present on the forest croplands at the time of expiration.

Part of the NE/4 NE/4 of Section 7 of T20N, R15E (25 acres) was entered under the Woodland Tax law in 1981 for a 15-year period. The penalty to the landowner for early withdrawal is dependent on the time entered under the law. There is no penalty for non-renewal at the time the contract expires.

The Forest Crop Law Entry must remain open to public hunting and fishing. The Woodland Tax Law Entry does not.

6. Multiple use of impoundment for fish and wildlife benefits - Assuming that some potential for a low-head impoundment will be determined practicable by future surveys in the area between Highways "110" and "W", a complete, careful assessment of values, needs and user potential for fish and wildlife will need to be undertaken.

A development of this type could contribute to both duck, fingerling northern and fingerling walleye production. As waterfowl habitat in the Fox-Wolf basins has been declining, so to some degree have some fish spawning habitats. While this is not viewed as a major problem, the development of an intergrated management plan to maximize benefits for these species and associated user groups will require careful evaluation.

7. Multiple Use - While this principle is accepted and its application advocated for the property, all user groups cannot be accommodated at all times. In fact, user satisfaction is frequently dependant upon the segregation of user groups if not individual isolation. In instances of conflicting use, the primary users shall be hunters, fishers and trappers consistent with property objectives. Additional users shall be accommodated when compatible with these primary user groups.

RECREATIONAL NEEDS AND JUSTIFICATIONS

According to the East Central Wisconsin Regional Planning Commission, there is a current need for over 20,000 acres of additional hunting and other passive recreational lands in the Fox Cities urban area. Increases in population combined with greater outdoor recreation participation will require even more land in the future. The Rat River Wildlife Area is within a 20-minute drive of over 250,000 people in the Fox Cities (Kaukauna to Oshkosh) and therefore presents a unique opportunity to fulfill part of these recreational needs.

Hunting

Currently, there are approximately 450,000 annual hunting occasions generated by Fox Cities residents. By the year 2000 there will be over 500,000 occasions. Habitat destruction and the reduction of private lands open to hunting will drastically increase pressure on existing public areas and require additional lands of participation rates and the quality of the hunting experience are to be maintained.

Hiking and Nature Study

The need for hiking and nature study increased greatly between 1970 and 1980. The demand for hiking is approximately 1,500 occasions per weekend in the Fox Valley. There currently is a 39-mile deficit of hiking trails and a 43-mile deficit of nature study trails. While it is not expected, the demand for this activity will continue to increase as it did in the past ten years; it will equal population increases.

Cross-Country Skiing

Participation in cross-country skiing has also dramatically increased since 1970. It is estimated there is an existing deficit of 48 miles of cross-country ski trails in the Fox Valley area. There are a few large public recreation areas with crosscountry ski trails close to the Fox Valley however, these areas have little additional ski trail development potential.

ANALYSIS OF ALTERNATIVES

1. Increase Property Size or Development:

Public demand for recreational land in this vicinity is excessive. The primary reason is the lack of any significant county, federal or other state ownership near this part of the highly populated Fox River Valley. Recent increases in energy and other costs probably contribute to increased local demand for recreational opportunities. By this measure, a significant increase in property size could be justified.

The cost of this alternative would include additional upland areas, most of which would be agricultural. Two other areas for possible expansion are primarily swamp conifer-swamp hardwood types in private ownership which now provide substantial deer hunting opportunity. Upland areas would supply nesting and upland game habitat while lowland areas could be flooded to provide additional waterfowl-furbearer habitat, but at the expense of some of the best deer habitat, (including winter habitat), in Winnebago and southern Outagamie Counties.

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Any possibility for development above what is now being considered seems unlikely due to landform limitations. The lack of this data, as indicated previously, makes any further considerations purely speculative at this time. Opportunities which may appear feasible upon completion of a detailed engineering survey could be considered for future modifications of this plan, after analysis and needs justification.

2. Reduce Size or Development:

Any public land in this vicinity will experience substantial recreational use. With this understanding, the size of our amount of development on this property could be reduced by any degree. As such, it would still provide public recreational opportunities and possible educational-habitat preservation values, depending upon size and lands involved.

Significant reductions in scope of the property would necessarily result in needed modifications of the state goal and objectives. The most important of which are probably those relating to special limitation, (recreational days), since intensive management efforts can overcome this limitation only to some degree. While intensive efforts can partially overcome these, costs and manpower limitations frequently become the controlling factors.

3. Do Nothing:

The current state ownership on the Rat River property would continue to provide public recreation, produce some wildlife and preserve habitats on current ownerships. Discontinuing development and acquisition efforts would result in reductions in recreational days and quality due to habitat deterioration and scattered ownership patterns. A loss of the anticipated furbearer and waterfowl benefits would result due to lack of development.

Long-term changes in habitat would probably be towards monotypic types, favoring white-tailed deer and ruffed grouse and result in loss of the wide species diversity now resident. While this alternative would certainly provide some valuable public benefits, the full investment potential would not be realized.

The recommended management and development program for this property is an amalgam of reduction, status quo and potential enlargement alternatives. It is felt this mix will provide the maximum public benefits for the least dollar expenditure.